CLAIMS 1-14:

1. Hemocompatible surfaces, characterized in that they contain as materials artificial and/or natural organic and/or inorganic compounds and/or mixtures thereof and/or materials having contact with blood and/or other body fluids in invasive operations and/or animal organs and/or organ parts, and constituents of the outer layers of blood cells and/or mesothelial cells are applied and/or incorporated onto and/or into the surfaces of said materials.

2. The hemocompatible surfaces according to claim 1, characterized in that they are non-thrombogenic and/or non-immunogenic.

3. The hemocompatible surfaces according to one of claims 1 or 2, containing glycophorins on and/or in the surfaces of the materials.

4. The hemocompatible surfaces according to one of claims 1–3, containing on and/or in the surfaces of the materials oligosaccharide, polysaccharide and/or lipid portions of the glycoproteins, glycolipids and/or proteoglycans from the outer layer of blood cells and/or mesothelial cells.

5. The hemocompatible surfaces according to one of claims 1-4, containing glycosphingolipids on and/or in the surfaces of the materials.

6. The hemocompatible surfaces according to one of claims 1–5, containing on and/or in the surfaces of the materials as the oligosaccharide and/or polysaccharide portions of the proteoglycans hyaluronic acids, chondroitin sulfates, dermatan sulfates, heparan sulfates, keratan sulfates or mixtures thereof.

7. The hemocompatible surfaces according to one of claims 1–6, containing on and/or in the surfaces of the materials heparan sulfate of the erythrocyte plasma membrane of animal and/or human origin.

8. The hemocompatible surfaces according to one of claims 1–7, containing as the materials high-molecular organic compounds and/or metals, metal oxides, alloys, ceramics, glasses, minerals and/or mixtures of the materials mentioned before.

9. A process for making hemocompatible surfaces, characterized in that

a) glycophorins and/or oligosaccharide, polysaccharide and/or lipid portions of the glycoproteins, glycolipids and/or proteoglycans are isolated from the outer layer of blood cells and/or mesothelial cells, and

b) said cell constituents are applied and/or incorporated onto and/or into the surfaces of materials of artificial and/or natural organic and/or inorganic compounds and/or mixtures thereof and/or materials having contact with blood and/or other body fluids in invasive operations and/or animal organs and/or organ parts by physical or chemical bonding.

10. The process according to claim 9, characterized in that the constituents of the outer layer of blood cells are isolated from whole blood and/or from cell fractions obtained therefrom of human or animal origin.

11. The process according to one of claims 9 or 10, characterized in that cell constituents are isolated from erythrocytes, leucocytes and/or thrombocytes and/or mixtures thereof.

12. The process according to one of claims 9-11, characterized in that constituents of the outer layer of mesothelial cells are isolated from omentum, peritoneum and/or inner organs.

13. The process according to one of claims 9–12, characterized in that a chemical immobilization, photoimmobilization, adhesion, drying process or a combination thereof is carried out for applying and/or incorporating the cell constituents onto and/or into the surfaces of the materials.

14. Use of hemocompatible surfaces according to one of claims 1-8 in extensive fields of health, in medicine, dentistry, surgery, cosmetics and/or in fields having contact with blood, tissue and/or other body fluids during invasive operations.

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